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IS 10499 (1983): wooden toggles [CED 9: Timber and Timber Stores]

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# *Indian Standard*

# SPECIFICATION FOR WOODEN TOGGLES

UDC 685·531·056 : 674·03

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INDIAN STANDARDS INSTITUTION
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Gr 2

*June* 1983

# *Indian Standard*

# SPECIFICATION FOR WOODEN TOGGLES

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DR A. N. NAYER
C-59, Inderpuri, New Delhi 110012

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# *Indian Standard*

# SPECIFICATION FOR WOODEN TOGGLES

## 0. FOREWORD

**0.1** This Indian Standard was adopted by the Indian Standards Institution on 22 February 1983, after the draft finalized by the Timber Stores Sectional Committee had been approved by the Civil Engineering Division Council.

**0.2** A large quantity of wooden toggles are used by Defence Organizations in tentage, textile and other clothing items. This Indian Standard has been prepared at their request to cater to all types of toggles being used at present.

**0.3** In the formulation of this standard due weightage has been given to the need for international co-ordination among the standards and practices prevailing in different countries in addition to relating it to the practices in the field in this country.

**0.4** For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

## 1. SCOPE

**1.1** This standard covers the requirements of five different types of wooden toggles.

## 2. TERMINOLOGY

**2.0** For the purpose of this standard, the definitions given in IS : 707-1976† shall apply.

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*Rules for rounding off numerical values ( *revised* ).

†Glossary of terms applicable to timber technology and utilization ( *second revision.*)

## 3. MATERIAL

**3.1** The toggles shall be manufactured from any of the species of timber given in Appendix A.

**3.2** The timber used shall be seasoned to a moisture content not exceeding 15 percent and shall be fairly straight-grained. It shall be free from sapwood centre-heart ( pith ), any kind of decay ( rot ), live insect attack, knots ( except live pin knots ), splits, checks ( except hair cracks ) and warp.

## 4. MANUFACTURE

**4.1** The toggles type 1 to type 5 shall be manufactured to the shapes and design shown in Fig. 1 to 5 respectively.

## 5. DIMENSIONS AND TOLERANCES

**5.1 Dimensions** — The different types of toggles shall conform to their respective dimensions as shown in Fig. 1 to 5.

**5.2 Tolerances** — The tolerances on the linear dimensions shall be as follows:

| *Nominal Dimension* | *Tolerance* |
|---|---|
| mm | mm |
| Up to 5 | ± 0·5 |
| Up to 15 | ± 1·0 |
| Over 15 but below 40 | ± 2·0 |
| 40 and above. | ± 3·0 |

## 6. WORKMANSHIP AND FINISH

**6.1** The toggles shall be neatly turned and shall be finished smooth all over.

**6.2** The notch shall be accurately and clearly cut.

## 7. SAMPLING

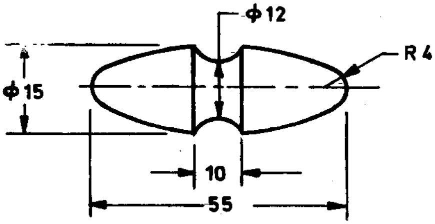
**7.1** The method of drawing representative samples of the toggles and the criteria for conformity shall be as prescribed in Appendix B.

## 8. MARKING

**8.1** Unless otherwise specified, each toggle shall be legibly and indelibly marked with the manufacturer's name or recognized trade-mark and the year of manufacture.

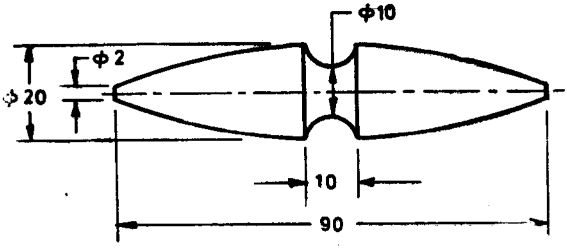
**8.1.1** The toggle may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution ( Certification Marks ) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions, under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.



All dimensions in millimetres.

FIG. 1 WOODEN TOGGLE, TYPE 1



All dimensions in millimetres.

FIG. 2 WOODEN TOGGLE, TYPE 2

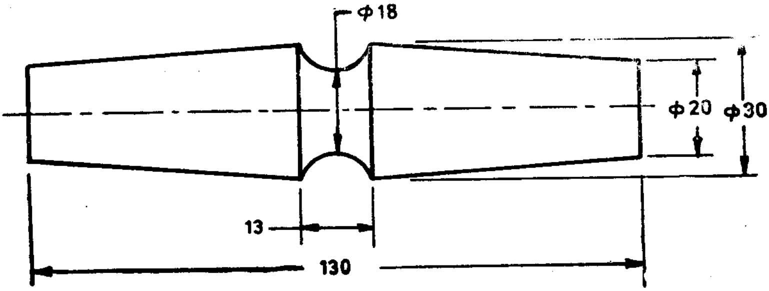


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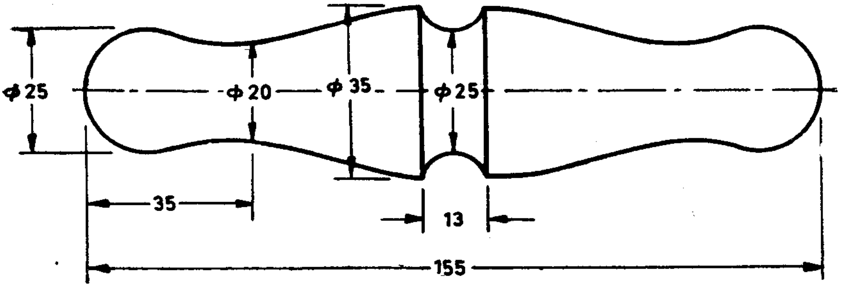
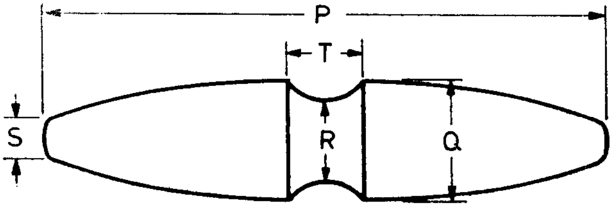
FIG. 3 WOODEN TOGGLE, TYPE 3



All dimensions in millimetres.

FIG. 4 WOODEN TOGGLE, TYPE 4



All dimensions in millimetres.

| SIZE No. | P | Q | R | S | T |
|---|---|---|---|---|---|
| 1 | 125 | 30 | 22 | 15 | 14 |
| 2 | 105 | 25 | 17 | 7 | 12 |
| 3 | 90 | 20 | 13 | 5 | 10 |
| 4 | 75 | 17 | 10 | 4 | 8 |
| 5 | 65 | 17 | 10 | 4 | 8 |
| 6 | 65 | 17 | 10 | 4 | 8 |

FIG. 5 WOODEN TOGGLE, TYPE 5

## APPENDIX A

( *Clause* 3.1 )

### SPECIES OF TIMBER SUITABLE FOR TOGGLES

| *Standard Trade Name* | *Botanical Name* |
|---|---|
| Amari | *Amoora* spp. |
| Benteak | *Lagerstroemia lanceolata* |
| Chaplash | *Arotocarpus chaplasha* |
| Dhaman | *Grewia tilifolia* |
| Ebony | *Diospyros* spp. |
| Gamari | *Gmelina arobrea* |
| Kassi | *Bridelia* spp. |
| Kindal | *Terminalia paniculata* |
| Kumbi | *Careva arborea* |
| Laural | *Terminalia alata* |
| Mullilam | *Zanthoxylem rhetsa* |
| Padauk | *Pterocarous dalbergioides* |
| Sissoo | *Dalbergia sissoo* |
| Teak | *Tectona grandis* |
| Toon | *Toona ciliota* |
| White cedar | *Dysoxylum malabaricum* |

## APPENDIX B

( *Clause* 7.1 )

### SAMPLING AND CRITERIA FOR CONFORMITY

### B-1. SCALE OF SAMPLING

**B-1.1** Sampling of toggles shall be done adopting any one and appropriate sampling method as given in IS : 4905-1968*, so that the samples drawn as in Table 1 below for assessing various quality requirements are truly representative of the lot.

**B-1.2 Lot** — In any consignment, if all the toggles are homogeneous in respect of shape, type, size, colour, source and year of manufacture, the delivery shall be treated as one lot. If not, it shall be segregated by the firm/supplier into separate groups such that each group homogeneous within itself forms a lot.

---

*Methods for random sampling.

### TABLE 1 SCALE OF SAMPLING AND PERMISSIBLE NUMBER OF DEFECTIVES

( *Clauses* B-1.1, B-1.3, B-2.2, B-3.1 *and* B-3.3 )

| No. of Toggles in the Lot (1) | No. of Toggles to be Drawn in the Sample (2) | Permissible No. of Defective Toggles in the Sample (3) | No. of Toggles in the Sub-sample (4) | Permissible No. of Defective Toggles in the Sub-sample (5) |
|---|---|---|---|---|
| Up to — 100 | 13 | 2 | 8 | 1 |
| 101 — 150 | 20 | 3 | 8 | 1 |
| 151 — 300 | 35 | 5 | 8 | 1 |
| 301 — 500 | 50 | 7 | 8 | 1 |
| 501 — 1000 | 80 | 10 | 13 | 2 |
| 1001 — 3000 | 125 | 14 | 13 | 2 |

**B-1.3** The conformity of the toggles in a consignment to the requirements of this specification shall be ascertained for each lot separately. The number of toggles to be drawn in the sample shall be in accordance with col 1 and 2 of Table 1.

## B-2. CRITERIA FOR CONFORMITY

**B-2.1** All the toggles selected according to **B-1.1** and **B-1.3** shall be inspected for shape, workmanship, finish and other visual defects.

**B-2.2** The lot shall be considered as conforming to the requirements as given in **B-2.1**, if the number of defective toggles is less than or equal to the number given in col 3 of Table 1, otherwise the lot shall be rejected.

## B-3. SELECTION OF SAMPLES FOR FURTHER TESTS

**B-3.1** In case, the lot has been found satisfactory in **B-2.2** a sub-sample of size given in col 4 of Table 1 shall be drawn at random from the sampled toggles ( col 2 of Table 1 ).

**B-3.2** All the toggles selected as in **B-3.1** shall be tested for dimensions, moisture content and species of timber.

**B-3.3** The lot shall be considered conforming to the requirements of the tests given in **B-3.2** if the number of defective toggles is less than or equal to the number given in col 5 of Table 1, otherwise the lot shall be rejected.

# INTERNATIONAL SYSTEM OF UNITS ( SI UNITS)

## Base Units

| Quantity | Unit | Symbol |
|---|---|---|
| Length | metre | m |
| Mass | kilogram | kg |
| Time | second | s |
| Electric current | ampere | A |
| Thermodynamic temperature | kelvin | K |
| Luminous intensity | candela | cd |
| Amount of substance | mole | mol |

## Supplementary Units

| Quantity | Unit | Symbol |
|---|---|---|
| Plane angle | radian | rad |
| Solid angle | steradian | sr |

## Derived Units

| Quantity | Unit | Symbol | Definition |
|---|---|---|---|
| Force | newton | N | $1\ \mathrm{N} = 1\ \mathrm{kg.m/s^2}$ |
| Energy | joule | J | $1\ \mathrm{J} = 1\ \mathrm{N.m}$ |
| Power | watt | W | $1\ \mathrm{W} = 1\ \mathrm{J/s}$ |
| Flux | weber | Wb | $1\ \mathrm{Wb} = 1\ \mathrm{V.s}$ |
| Flux density | tesla | T | $1\ \mathrm{T} = 1\ \mathrm{Wb/m^2}$ |
| Frequency | hertz | Hz | $1\ \mathrm{Hz} = 1\ \mathrm{c/s}\ (\mathrm{s^{-1}})$ |
| Electric conductance | siemens | S | $1\ \mathrm{S} = 1\ \mathrm{A/V}$ |
| Electromotive force | volt | V | $1\ \mathrm{V} = 1\ \mathrm{W/A}$ |
| Pressure, stress | pascal | Pa | $1\ \mathrm{Pa} = 1\ \mathrm{N/m^2}$ |